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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,906	11/07/2005	Andrew Miller Cameron	M02B129	6895
20411	7590	10/02/2009		
The BOC Group, Inc. 575 MOUNTAIN AVENUE MURRAY HILL, NJ 07974-2082				
EXAMINER				
YANG, JIE				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
10/02/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/517,906

Applicant(s)

CAMERON ET AL.

Examiner

JIE YANG

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date No mailing-room date.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim 1 has been amended; Claims 1-21 are pending in application.

Status of the Previous Rejection

The previous rejection of claims 1, 9, and 11-14 under 35 U.S.C. 103(a) as being unpatentable over Schlichting (US 5,366,537, thereafter US'537) is withdrawn in view of the Applicant's amendment and remarks filed on 6/3/2009. However, upon further consideration, a new ground(s) of rejection is made as following.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichting (US 5,366,537, thereafter US'537) in view of Edlinger (US 6,409,793 B1, thereafter, US'793).

US'537 is applied to claims 1, 9, and 11-14 for the same reason as stated in the previous office action marked 3/16/2009.

Regarding the amended feature in the instant claim 1, US'537 does not specify adding metallurgical acceptable

particular material, capable of providing a cooling effect as recited in the instant claim 1. US'793 teaches a method for producing steel slags containing chromium (title and Abstract of US'793). US'793 teaches chromium ores or chromium-containing dusts are top blown onto the bath via a hot blast lance by the aid of jet of suitable speed (Col.2, lines 13-30 of US'793), which is the same metallurgical acceptable particular material as recited in the instant invention (refer to the instant claim 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the chromium-containing dusts as taught by US'793 in the process of US'537 in order to obtain high-grade ferrochromium alloy (Abstract of US'793). At the same time, the introduction of the same metallurgical acceptable particular material as recited in the instant invention, for example, chromium ores or chromium-containing dusts as demonstrated by US'793 would inherently lead to the cooling effect to the molten metal process of US'537 in view of US'793. MPEP 2112 III&IV.

US'537 in view of US'793 is applied to claims 2-8, 10, and 19-21 for the same reason as stated in the previous office action marked 3/16/2009.

Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US'537 in view of US'793 as applied on claims 1-14 and 19-21, and further in view of Fritz (WO 0012767 used hereinafter with US 6,558,614, US'614).

US'537 in view of US'793 is applied to the claims 1-14 and 9-21 as discussed above, US'614 is further applied to claims 15-18 for the same reason as stated in the previous office action marked 3/16/2009.

Response to Arguments

Applicant's arguments with respect to claims 1-21 under 35 U.S.C. 103(a) have been considered but are not persuasive. Regarding the arguments that related to the amended feature, the Examiner's position is stated as above.

In the remark, the Applicant argues that:

1) Schlichting (US'537) does not teach introducing particular material to provide a cooling effect and Schlichting (US'537) teaches in a direction opposite to limit or control the temperature rise as recited in the instant claims.

2) Fritz (US'614) does nothing to rectify the deficiency of Schlichting (US'537), Fritz (US'614) discloses blowing oxygen into the melt for the purpose of further combusting undesirable components of the melt, which will increase the heat in the melt.

3) Nothing in Edlinger (US'793) rectifies the deficiency of Schlichting (US'537). Neither of the references individually, nor the references combined, teaches or suggests amended claim 1.

In response,

Regarding the arguments 1) to 3), the applicant's arguments are against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In the instant case, US'537 in view of US'793 teaches the limitations of instant claims 1-14 and 19-21; and US'537 in view of US'793 and further in view of US'614 teaches the limitations of instant claims 15-18. All of the recorded prior arts teach the process of introducing oxygen gas and metallurgical acceptable material into the molten metal. "Cooling effect" is recognized as a result which depends on the effective variables, for example, speed of gas, kind of gas, and introducing materials (Refer to page 4, lines 12-29 of the instant specification). As discussed in the rejection for the instant claim 1, US537 in view of US'793 teaches the similar top blowing oxygen and/or mixing gas with the same supersonic speed and using the similar chromium-containing dusts as recited in the instant invention, which would inherently lead to the similar cooling effect as claimed to the molten metal process of US'537 in view of US'793. The detail discussions and the motivation for combining the prior arts can refer to the instant office action above and the previous office action marked 3/16/2009.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-2701884. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY

/Roy King/
Supervisory Patent Examiner, Art Unit 1793